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MZA products also have significant advantages in relation to  $C_2S$ -bonded magnesia bricks. The periclase and the  $CaO$  in the dicalcium silicate phase of the  $C_2S$  products are converted by  $SO_3$  in the exhaust gas into sulfates or sulfides, respectively. This again results in destruction of the brick microstructure.

The lower the  $SiO_2$  content (the silicate phase), the more favorable the properties of the brick are for the application cited. According to one embodiment, the  $SiO_2$  content is thus to be less than 1.0 weight-percent, and according to another embodiment it is to be less than 0.5 weight-percent (in relation to the total batch and/or the total molded part).

The  $CaO$  content ( $CaO$  able to be provided as calcium zirconate, for example) is below 2 weight-percent according to one embodiment.

The mineralogical composition of the MZA product may move within the known ranges (Routschka, op. cit.).

According to one embodiment the product comprises 5 to 35 weight-percent  $ZrO_2$ , 65 to 95 weight-percent  $MgO$ , and at most 5 weight-percent other components, according to another embodiment at most 2% other components.

The open porosity, determined in accordance with DIN EN 993-Part 1, is to be between 11 and 15 volume-percent, or between 12 and 14 volume-percent according to one embodiment.

After firing above  $1700^\circ C$ , an apparent density between 3.20 and  $3.55 \text{ g/cm}^3$ , or between 3.25 and  $3.40 \text{ g/cm}^3$  according to one embodiment, may be achieved. In this case, the apparent density is determined in accordance with DIN EN 993-Part 1.

REPLACED BY  
ART 34 AMDT

USE OF A MAGNESIA-ZIRCONIA BRICKPATENT CLAIMS

What is claimed is:

1. A use of a magnesia-zirconia brick in regenerator chambers of glass melting furnaces, which are at least partially operated using a reducing atmosphere.
2. The use according to Claim 1, wherein the bricks have a  $\text{SiO}_2$  content  $< 1.0$  weight-percent.
3. The use according to Claim 1, wherein the bricks have a  $\text{CaO}$  content  $< 2.0$  weight-percent.
4. The use according to Claim 1, wherein the brick comprises 5 to 35 weight-percent  $\text{ZrO}_2$  and 65 to 95 weight-percent  $\text{MgO}$  as well as at most 5 weight-percent other components.
5. The use according to Claim 1, wherein the brick contains at most 2% other components.
6. The use according to Claim 1, wherein the open porosity of the brick is 11 to 15 volume-percent.
7. The use according to Claim 1, wherein the apparent density of the brick after firing is 3.20 to 3.60  $\text{g/cm}^3$ .

REPLACED BY  
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8. The use according to Claim 1,  
wherein the cold compression strength of the brick  
after firing is 50 to 150 N/mm<sup>2</sup>.

REPLACED BY  
ART 34 AMDT